McKinsey on Government

Number 9
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Introduction

Welcome to the third special issue of *McKinsey on Government* dedicated to defense. This issue arrives at an unusual moment of contraction in defense markets. It's not strange that the defense business sometimes shrinks; after all, these markets are cyclical, though not in the traditional way of many businesses. Defense-spending patterns, however, tend to be dictated in the short term by threat levels, real and perceived; in the long term, economic prosperity plays the largest role. (We offer an intriguing display of ways that prosperity drives defense spending in "Global defense spending: The shifting center of gravity.")

What's unusual is that, although geopolitical tensions have increased this year in both Eastern Europe and the Middle East, the contraction in spending in core Western markets is accelerating. Short-term threats are being overridden by long-term economic factors. Our interview with Major General Erhard Bühler, the leader of training and exercises for the North Atlantic Treaty Organization, details the new and different threats that challenge militaries and their suppliers in a time of shrinking budgets.

The decline in spending is gaining momentum; in fact, in many countries, the next few years of lower spending are already enshrined in local law. The *French White Paper: Defence and National Security 2013* set the scene in France for a multiyear budget law, freezing spending at €31.4 billion from 2014 to 2019. In Germany,

the defense budget is supposed to decline to around €32.5 billion by 2015 (although some politicians are pushing for an increase in defense spending to address highly visible shortfalls). Further cuts are planned in Italy by 2015 as well. The United Kingdom's defense budget declined from 2011 to 2013, and the country is due for a new Strategic Defence and Security Review (and a new Parliament) in 2015, with little prospect of any change in advance of that. And the United States continues to live under the shadow of the sequester. Total US defense spending fell from $666 billion in 2010 to a forecasted $588 billion in 2015.

This has caused defense customers to search for efficiencies and defense suppliers to seek refuge. For government leaders, the need to do more with less grows more urgent with time. Our interview with the new head of performance in France's armed services explains how one country is dealing with those pressures. As Vice Admiral Eric Chaplet discusses, reform in the military is not like reform in other large organizations. That has been our experience, too, as we summarize in "Five principles to manage change in the military."

Companies continue their search for new pockets of growth in segments such as unmanned aerial vehicles and cybersecurity, as well as in international markets. Those with commercial-aerospace businesses are enjoying the 12th consecutive year of market growth. How long can this good news continue? Our survey of industry leaders, "Defense outlook 2017: A global survey of defense-industry executives," provides more insight into what the people who head these businesses are thinking. But, as we discuss in "International aspirations: Why international sales may not meet defense companies' expectations," everyone is chasing the same set of opportunities. Competitive intensity is high. Not everyone will be able to build successful businesses in these areas, and accordingly some companies are beginning to rationalize their portfolios. Moreover, the ebbing tide of defense spending will hurt poor performers the most, so it appears that now is the time to exit segments and individual businesses that are underperforming.

Our last special issue on defense appeared in Spring 2013. Since then, much has changed, and we have attempted to document those shifts in this new issue. As always, we hope that you enjoy these articles and interviews and find in them ideas worthy of your consideration.

John Dowdy
Leader, Global Aerospace & Defense Practice

Andrew Grant
Leader, Global Public Sector Practice

Defense by the numbers

Ministries of defense

Government spending shifts south and east

5.4%
Annual decline in US defense investment,[1] 2010–15

10.4%
Estimated annual growth in defense investment outside Europe and the United States, 2010–15

8.3%
Increase in Africa's military spending in 2013; Africa is the world's fastest-growing region, with spending reaching $44.9 billion in 2013

31%
Rise in the Russian military budget from 2008 to 2013, when it totaled $68.2 billion

Personnel and readiness

New emphasis on reserve forces and tiered training

19.6%
Planned reduction of troops in UK Army's Regular Forces by 2017; Reserve Forces to be increased by 60%

8.2%
Planned decrease in US Army's active "end strength" from FY 2015 to FY 2019, dropping from 490,000 to 450,000

13
Number of combat squadrons stood down in the US Air Force in FY 2013

20
US and coalition units affected by the canceled Red Flag training exercises in FY 2013

185%
Increase in number of participants from 2012 to 2014 in Operation Unified Vision, the North Atlantic Treaty Organization's joint intelligence, surveillance, and reconnaissance exercise

19
US Army brigade-level training exercises in FY 2015, up from 9 in FY 2013

[1] Investment defined as procurement and research, development, test, and evaluation spending. Growth figures are nominal.

Source: *Aviation Week*; BBC; *Breaking Defense*; companies' annual reports; *Defense Daily*; *Defense News*; *Defense Tech*; earnings calls; investor presentations; *Military1*; *The Military Balance 2014*, International Institute for Strategic Studies, 2014, iiss.org; national defense budget estimates, US Department of Defense; publications from ministries of defense; rt.com; spacex.com; Stockholm International Peace Research Institute; Teal Group; UK Ministry of Defence annual report and accounts; UK National Audit Office; US Department of the Army; US Department of Defense Comptroller

Defense industry

Eyeing global markets, staying profitable

$50 billion
Decline in revenues of defense contractors from US Department of Defense, 2010–15

$28 billion
Rise in revenues of defense contractors from all other defense departments and ministries, 2010–15

60.3%
Defense-related sales as portion of all sales for 20 largest defense companies in 2013, up from 44.3% in 2000

32.6%
Total returns for shareholders of leading defense companies, 2012–14, compared with 23.9% for all S&P 500 companies

2.3%
Amount of sales leading US defense companies spent on independent R&D in 2013, down from 3.3% in 1999

Future of defense

Disruptive technologies emerge

50%
Increase in resolution of commercial images allowed by the United States in 2014—from 0.5m images to 0.25m images

4
Number of years required for US Army to record its second million flight hours for unmanned systems; it took 20 years to reach the first million

$5.1 billion
FY 2015 US presidential budget request for cyberspace operations budget, up from $4.7 billion in FY 2014

98%
Increase in number of permits for commercial unmanned aerial operations granted by US Federal Aviation Administration, 2009–13

Neil Webb

Global defense spending:
The shifting center of gravity

An understanding of the past century gives context to today's uncertainty.

Andrew Erdmann

It often seems that today is an era of unprecedented, rapid change—and with good reason. The past decade has seen the fastest shift in global economic power in human history.[1] The trends underpinning this are also reshaping the landscape of global defense power. In a 2013 article from *McKinsey on Government*, several related topics were explored: the decline in the United States' and its allies' share of global spending; the rise of spending in Asia, the Middle East, and Russia; and the potential future trajectories of both.[2]

Since then, these shifts have accelerated.[3] With change approaching faster than expected, some historical context is needed. An analysis of defense-spending data for more than 50 countries over the past century reveals a clear but surprising story (exhibit). The "center of gravity"[4] of global defense spending is indeed rapidly moving away from the United States. Yet this is not the first time the world has experienced a shift of this magnitude. Several times, the center of defense spending has swung dramatically as budgets rose in one part of the world and declined in another.

These shifts can be best understood if bracketed into three great waves, in which the tide of spending rushed first in one direction and then retreated.

The first wave, 1900–30. At the start of the 20th century, the center of gravity in global defense spending was in the middle of Europe. The rivalries in Europe defined the geopolitical landscape, despite the United States' rise to "great power" status by 1900 after a period of remarkable economic growth and victory in the Spanish-American War. The center of gravity remained in the center of Europe through the outbreak of the First World War.

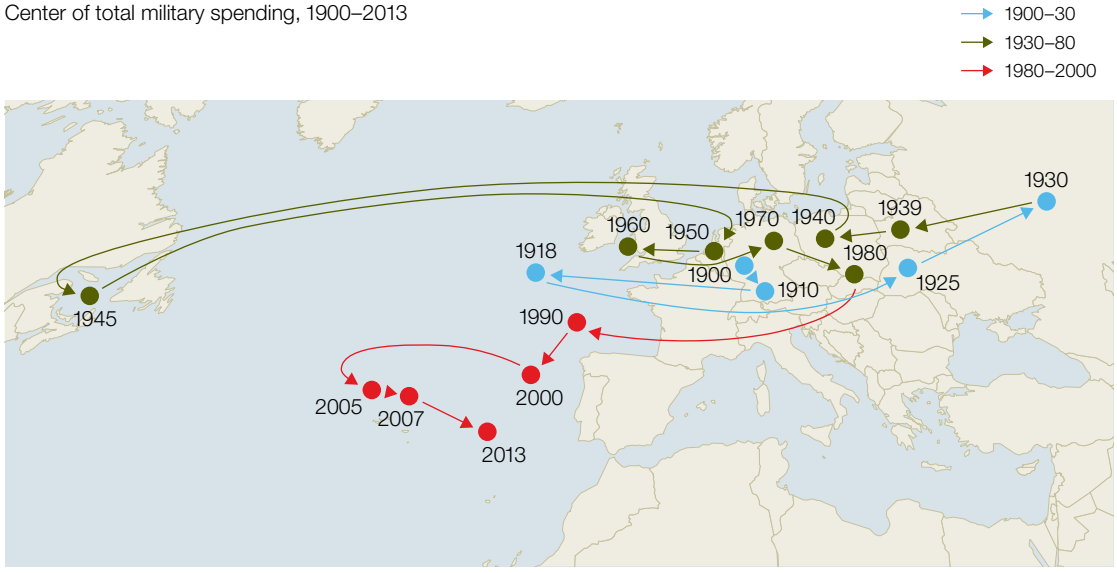
By 1918 and the end of the war, however, two simultaneous trends drove a dramatic swing westward in the center of gravity. First, the United States entered the war on the side of the Allied Powers and launched its rapid mobilization of society to support the war effort. Second, the Russian Empire collapsed in revolution and withdrew from the war. Between the Treaty of Versailles in 1919 and the Treaty of Locarno in 1925 that defined the postwar settlement, the center of gravity then swung dramatically back toward Eastern Europe—to today's Ukraine—in the defining movement of this first wave. The US withdrawal of armed forces from Europe and demobilization, the demilitarization of Germany, the fragmentation of the Austro-Hungarian and Ottoman empires, and the rise of the Soviet Union and the new Japanese empire contributed to this swing. The center of gravity continued moving eastward, into what was then the Soviet Union, in the early 1930s.

The second wave, 1930–80. The remilitarization of Germany under Hitler, followed by the increase in defense spending elsewhere in Europe and,

Exhibit

Three waves have defined shifts in the center of gravity for defense spending since 1900.

Center of total military spending, 1900–2013



Source: Correlates of War Project, National Material Capabilities data set; International Institute for Strategic Studies

eventually, the outbreak of the Second World War, brought the economic center of gravity back into Central Europe. As in the First World War, the entrance of the United States into the war in 1941 fundamentally altered the balance. By the end of the war in 1945, the United States' unprecedented mobilization of its economy—the country produced approximately half the world's GDP—supported, in turn, its massive defense spending.

At that point, the center of gravity had shifted across the Atlantic Ocean to the shores of Canada. The center then swung back to the middle of Europe by 1950, as the United States once again dismantled its military and cut its overall defense spending by more than 80 percent in five years. The European powers were still rebuilding after the war, and the Soviet Union maintained its massive military as it consolidated its influence across Central and Eastern Europe. For the next 30 years, the Cold War struggle between East and West set the boundaries for the center of gravity. Europe rearmed under the umbrella of the North Atlantic Treaty Organization, and the center of gravity ebbed and flowed across Europe until, in the aftermath of the drawdown of the United States following the Vietnam War, it was again in Eastern Europe, near today's Slovakia.

The third wave, 1980–present. The third great shift in global defense power began in 1980, at the time of the Soviet Union's invasion of Afghanistan. Increases in US spending started to move the center of gravity westward in the early 1980s. A decade later, the Cold War ended peacefully, the Soviet Union broke apart, and the United States emerged as the world's sole superpower.

Accordingly, the center of gravity moved once again into the Atlantic. The trend continued through the 1990s and into the first years of the 21st century, accelerated by the US defense buildup following the terrorist attacks of September 11, 2001. By 2005, the center of gravity had reached a point near the Azores Islands, marking the crest of the third wave. The center of gravity shifted eastward once again and, for the first time, southward, a movement accelerated in the aftermath of the 2008–09 global economic crisis that triggered retrenchments in the United States and much of Europe. During these years, China, the Middle East, Russia, and a number of Asian countries invested in making

their militaries even stronger. This third wave appears similar in its movements to the previous two waves, but its underlying drivers differ. Whereas earlier movements centered on questions of European security, the latest developments in the third wave are propelled by rising spending in emerging economies in Asia and the Middle East.

• • •

"History does not repeat itself," Mark Twain is credited with saying, "but it does rhyme." The three major waves in the center of gravity of global defense spending since 1900 reflect the broader story of the changing global balance of power. Ultimately, defense spending reflects the combination of a country's underlying economic health and more immediate strategic threats and opportunities. For most of this period, the ebbs and flows in the struggle for the mastery of Europe defined the path for the center of gravity. In the past decade, however, a new rhyme can be heard, as the spending of non-European powers accelerates the movement of the center of gravity for global defense spending away from the Atlantic.

[1] For more, see *Urban world: Cities and the rise of the consuming class*, McKinsey Global Institute, June 2012, on mckinsey.com

[2] Jonathan Ablett and Andrew Erdmann, "Follow the money: Strategy, scenarios, and the global shift in defense power," *McKinsey on Government: Special Issue: Defense*, Spring 2013, Number 8.

[3] *The Military Balance 2014*, International Institute for Strategic Studies (IISS), 2014, iiss.org.

[4] The "center of gravity" for a given year is a point on the Earth's surface, calculated by adding, across all countries, the product of each country's latitude and longitude and its defense spending, and then dividing by total world defense spending. This analysis uses data primarily from Correlates of War Project data sets, supplemented by the most recent IISS data for 2007–13. There are 55 countries in the sample, including 4 countries (Austria-Hungary, Czechoslovakia, the German Democratic Republic, and the Federal Republic of Germany) that are no longer sovereign states; their successors are all included in the sample. The percent of total global spending captured in our sample ranges from 94 to 99 percent of global spending, depending on the year.

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Daniel Hertzberg

International aspirations:
Why international sales may not meet defense companies' expectations

Most defense contractors expect to find growth in international sales and noncore businesses. Only a few are likely to succeed. Five actions can improve their chances.

David Chinn, Kevin Dehoff, and Giacomo Sonnino

Almost all Western countries have significantly cut defense spending in recent years, reflecting both a drawdown of forces in Afghanistan and Iraq and cuts to their overall government budgets. This is a long-term trend and has already affected equipment-acquisition budgets, with more cuts likely to come. Many defense companies say that they expect to replace the lost revenues with international sales—to countries other than the traditional large customers (the United States and some countries in Western Europe). However, our research indicates that the gap is much wider than the "primes"—or the analysts who cover these prime contractors—currently forecast. We estimate the cumulative shortfall in revenues from the US government's investment-account spending to be $50 billion between 2010 and 2015,[1] of which only about $29 billion is forecasted to be replaced by growing international sales.

In this article, we explain our research and suggest five actions that defense companies can take to succeed in international markets: understand the opportunity in detail, at the country and program level; develop more affordable products adapted to the needs of individual markets; organize for international growth, evolving from a narrow Western focus to a global structure; get the right talent to pursue domestic opportunities and establish international opportunities; and optimize offsets and other obligations through sound and responsible strategies.

Reality versus expectations

With Western defense budgets now in decline, aerospace and defense companies that sell to these governments are looking for ways to replace the lost revenues. The widely held expectation is that growth will come from international defense sales (see sidebar "Public commitments"). Companies are also attempting a shift to adjacent businesses, including commercial aerospace, civil helicopters, cybersecurity, business with other government departments (such as public security), and other businesses, as ways to make up for the reduction in defense spending.

Our research suggests that the industry's apparent optimism might be misplaced, at least with respect to the potential growth in international defense sales. We analyzed this issue in two ways. First, we reviewed global defense spending—that is, purchases by the 18 largest government defense buyers, representing 83 percent of addressable global spending. (We excluded China and Russia from this analysis; for more on their spending, see sidebar "Non-addressable spending.") We then analyzed the revenues generated by the defense industry (the 37 largest contractors, which generate 84 percent of all revenues created by the top 100 contractors). We analyzed each company and business unit for the period 2010 to 2015, assessing defense revenues; aerospace, security, and adjacent-business revenues; and their geographical split. We used actual revenues whenever possible; for estimates of current and future

Public commitments

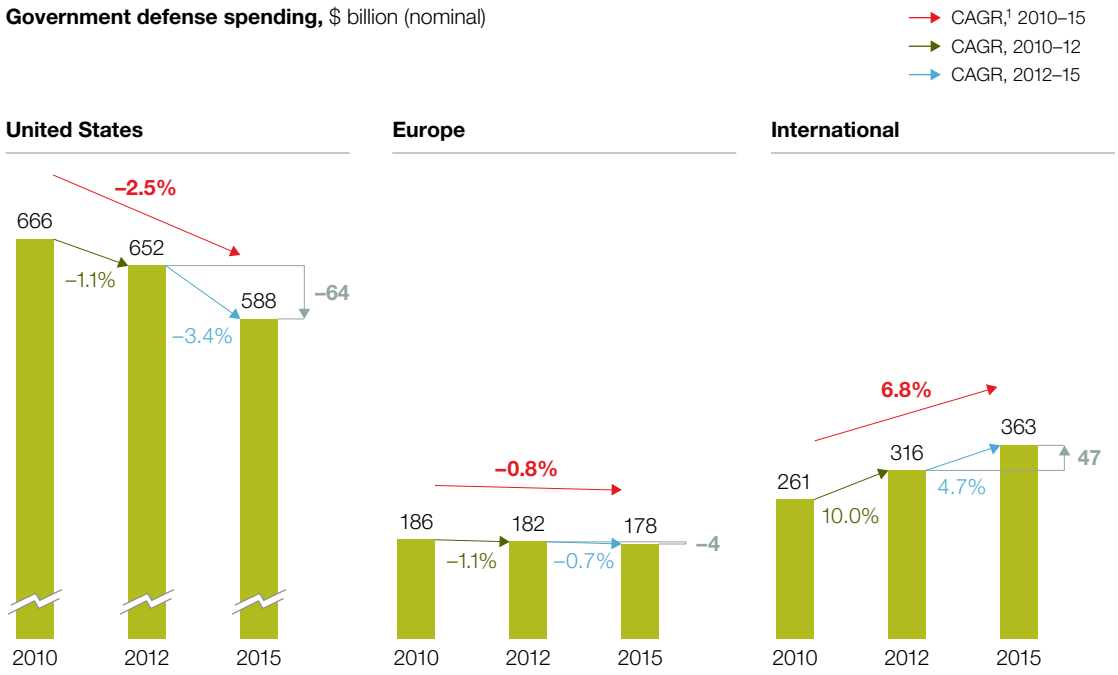
Many aerospace and defense companies are looking forward to growth in international sales and a shift to commercial lines of business, as evidenced by a sampling of public statements from executives:

- "The company remains on course to achieve its goal of increasing the revenue coming from international sales to 30 percent and is now focused on sustaining that growth figure."
- "International growth is an area of significant focus."
- "The company will turn its focus to its growing international markets over the next two years."
- "The near-term goal is to grow sales of its commercial products from about 25 percent of its total electronics business to at least 50 percent."
- "The focus on international sales is crucial with the diminishing domestic markets."
- "We've moved into cybercapability, to energy, clean-energy capabilities, and we'll see more of that."
- "We are more committed than ever to exploit our full potential [for] growth in international defense markets and the energy sector."

Exhibit 1

International growth will not offset the decline in Western spending.

Government defense spending, $ billion (nominal)



[1] Compound annual growth rate. Note that rates may not match yearly values shown, because of rounding.

Source: Ministry-of-defense reports; *National Defense Budget Estimates for FY 2015*, US Department of Defense, 2014, defense.gov; Teal Group; McKinsey analysis

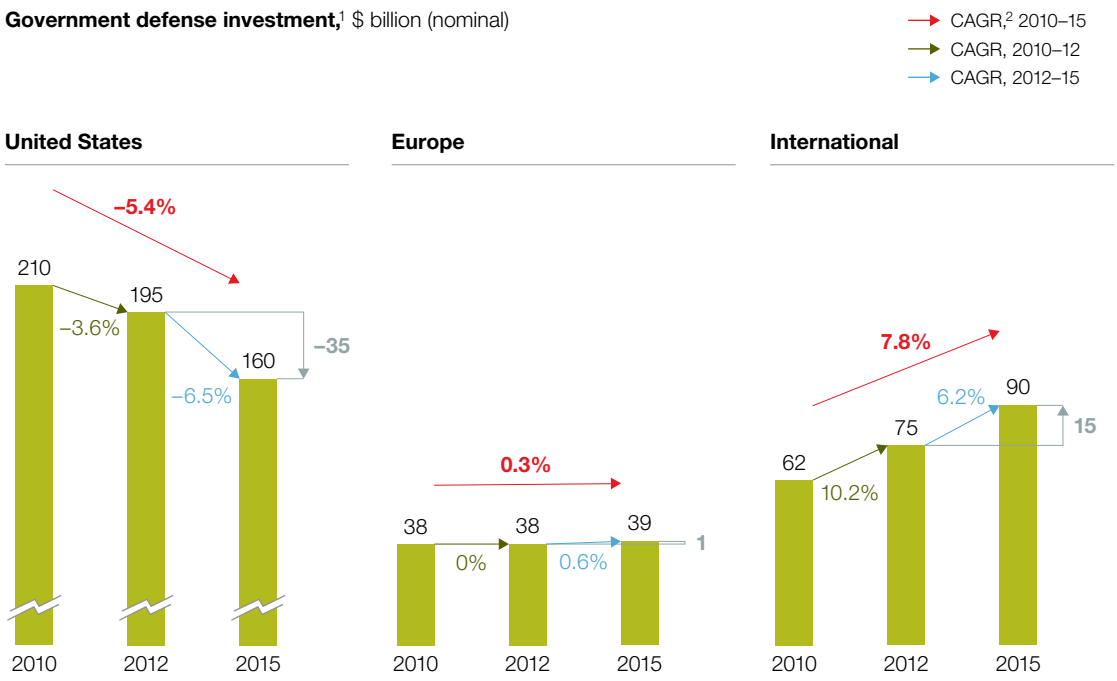
revenues, we relied on consensus market expectations, as seen in company projections, analyst reports, and other sources. (For more on our methodology, see sidebar "About this research.")

We estimate that growth in defense spending outside the United States will not offset the US decline (Exhibit 1). The total US defense budget (covering personnel, operations and maintenance, procurement, and all other categories) contracted by $14 billion between 2010 and 2012 and is forecasted to contract by $64 billion between 2012 and 2015; $35 billion of the reduction from 2012 to 2015 is forecasted to come out of investment—that is, procurement and research, development, testing, and evaluation (Exhibit 2). (Figures on defense spending and investment are nominal.) While there is considerable variation among European defense budgets, collectively, they contracted by $4 billion between 2010 and 2012 and are forecasted to contract by a further $4 billion between 2012 and 2015, while investment will be roughly flat over the same period. On the other side, the addressable international markets increased their total spending by $55 billion between 2010 and 2012 and are expected to add a further $47 billion between 2012 and 2015; investment accounts are forecasted to account

Exhibit 2

The gap in investment spending is even wider.

Government defense investment,[1] $ billion (nominal)



[1] Procurement and research, development, testing, and evaluation.
[2] Compound annual growth rate. Note that rates may not match yearly values shown, because of rounding.

Source: Ministry-of-defense reports; *National Defense Budget Estimates for FY 2015*, US Department of Defense, 2014, defense.gov; Teal Group; McKinsey analysis

for $15 billion of this growth (see sidebar "Non-addressable spending").

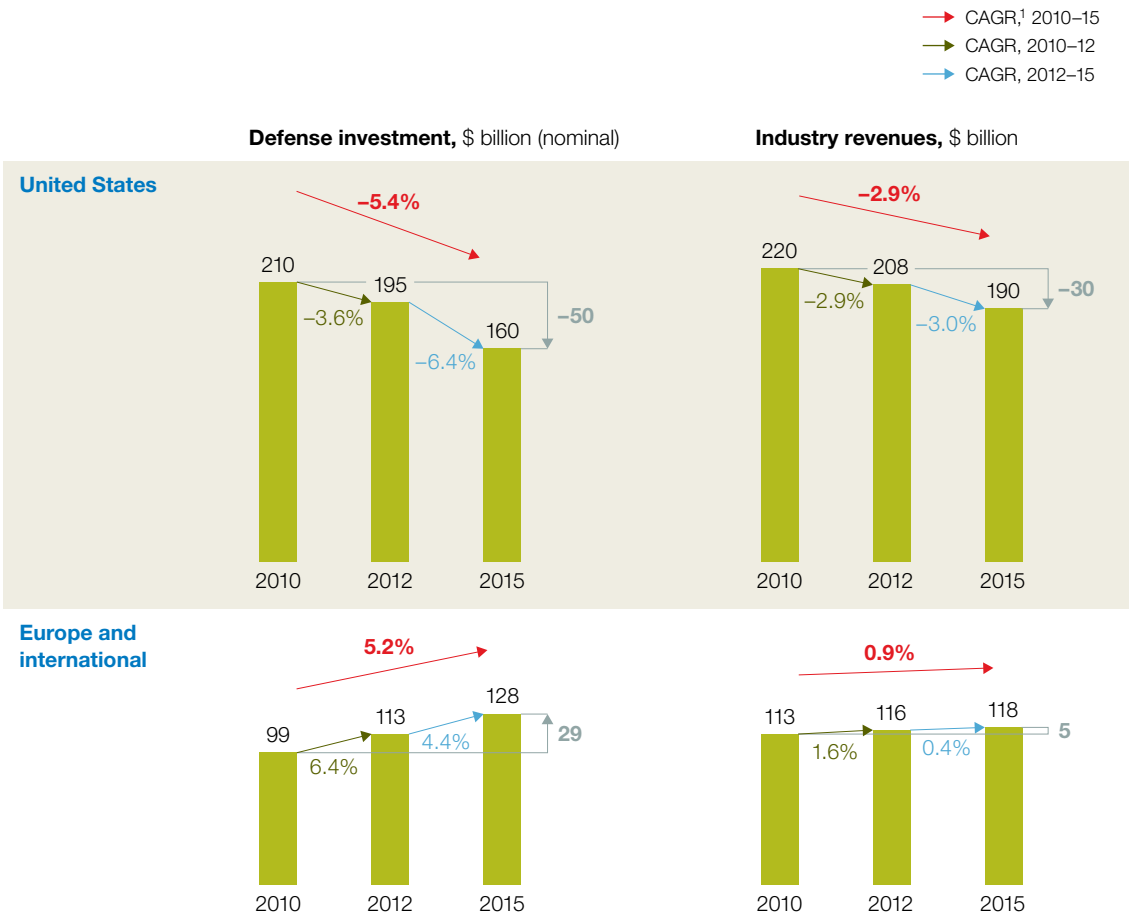
Exhibit 3 lays out the pertinent facts across the entire period we studied, 2010 to 2015. Annual US defense spending in investment accounts (equipment procurement and R&D) is slowing, from $210 billion in 2010 to $195 billion in 2012 to $160 billion in 2015. US revenues for defense companies are also declining. The companies we studied generated about $220 billion in revenues in the US in 2010[2] and $208 billion in 2012. But in 2015, companies and analysts still expect that they will generate $190 billion in revenues—$30 billion more than the government currently plans to spend. Even with revenues from other departments and continued subcontracting among these firms, companies' expectations might come up well short of reality.

Can they address this mismatch of expectations through new sales elsewhere? Our research suggests that not every company will be able to do so. Other countries outside the United States plan to spend more, it is true; European and international investment accounts are set to rise from $99 billion in 2010 to $113 billion in 2012 to $128 billion in 2015. But analysis of previous spending plans suggests that much of this

projected spending might fade and be directed inward to the domestic industry. For example, European defense spending has not met forecasts; a 2010 projection from the Teal Group for 2013 was 8 percent higher than the actual spending. Large tenders in emerging countries (for example, fighter-aircraft programs in India, South Korea, and the United Arab Emirates) have been delayed, retendered, or canceled altogether. Many defense firms are not set up for success overseas; they do not always have the products these governments want, and many are not organized to produce them and sell them well. Despite companies' public statements and international growth ambitions, our analysis suggests that revenues from international countries are

Exhibit 3

Revenue projections for the defense industry are overly optimistic.

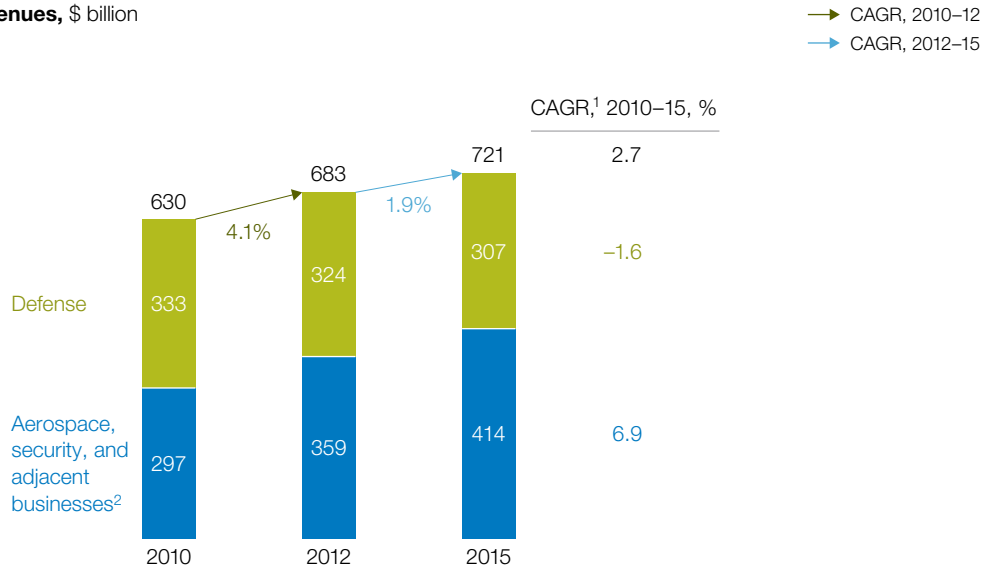


[1] Compound annual growth rate. Note that rates may not match yearly values shown, because of rounding.

Source: Analyst reports; annual reports; *National Defense Budget Estimates for FY 2015*, US Department of Defense, 2014, defense.gov; McKinsey analysis

Exhibit 4

Companies and analysts expect significant growth in aerospace, security, and adjacent businesses.



[1] Compound annual growth rate. Note that rates may not match yearly values shown, because of rounding.
[2] Includes aerospace, helicopters, cybersecurity, public security, and other businesses. Includes commercial and defense revenues of 2 large aircraft manufacturers.

Source: Analyst reports; annual reports; *Defense News*; McKinsey analysis

forecasted to rise only from $113 billion in 2010 to $116 billion in 2012 to $118 billion in 2015.

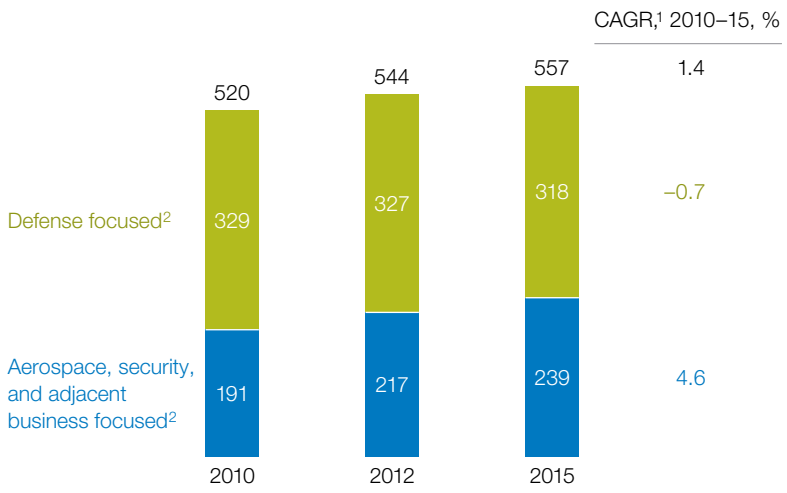
Aerospace, security, and other adjacent businesses (for example, civil helicopters and security products and services) are enjoying strong growth that looks set to continue (Exhibit 4). Thanks to the up cycle in commercial aircraft and growth in adjacent markets, industry-wide growth has offset defense-revenue losses in recent years and is expected to continue to do so (though with the important proviso that a big portion of that growth is captured by two large aircraft manufacturers; excluding them, the growth in commercial is not big enough to offset the decline in defense). The aerospace, security, and adjacent-business portion of the business mix at top defense contractors is expected to shift to 57 percent by 2015, up from 47 percent in 2010.

We divided our sample of 37 companies[3] into those that are defense focused (that is, they derive more than 50 percent of revenues from defense) and those that are commercial focused (that is, they derive more than 50 percent of revenues from aerospace, security, and adjacent businesses). We found that the shape of aerospace and defense companies' portfolios makes a significant difference in their performance. Growth at commercial-focused companies is expected be about 5 percent faster annually than at defense-focused companies between 2012 and 2015 (Exhibit 5).

Exhibit 5

Contractors focused on aerospace, security, and adjacent businesses have outperformed those focused on defense.

Industry revenues by orientation of company, $ billion



[1] Compound annual growth rate. Note that rates may not match yearly values shown, because of rounding.
[2] Based on 2012 revenues. Aerospace, security, and adjacent business–focused (or commercial-focused) firms derive more than 50% of revenues from these businesses; defense-focused firms obtain more than 50% from defense sales. Commercial sales of 2 large aircraft manufacturers are excluded; their defense revenues are included.

Source: Analyst reports; annual reports; *Defense News*; McKinsey analysis

A geographical split is also apparent here: European companies, which are more exposed to international markets and more diversified, are forecasted to outgrow US companies by about two percentage points annually between 2010 and 2015 (Exhibit 6).

Despite the challenges, the industry's confidence is high. Our review suggests that for the industry as a whole, companies and analysts are predicting an unprecedented 55 percent improvement in the profitability of their operations from 2010 to 2015 (Exhibit 7). Indeed, 90 percent of companies say they hope to increase their operating margins over this period.

Delivering on the promise

The industry as a whole may not make good altogether on its growth and profit targets, but there is no reason that individual companies cannot do so. International growth can help close the gaps that arise from shrinking European and US defense budgets; in fact, some defense primes are growing their international businesses successfully. To compete in international markets (and in general), defense players need to be much more "commercial" and nimble in their approach. Almost all defense customers now expect their suppliers to deliver the best technology at the lowest cost, regardless of where it originates from. Companies need to address five challenges to be successful internationally.

1. Is there enough value in the opportunity?

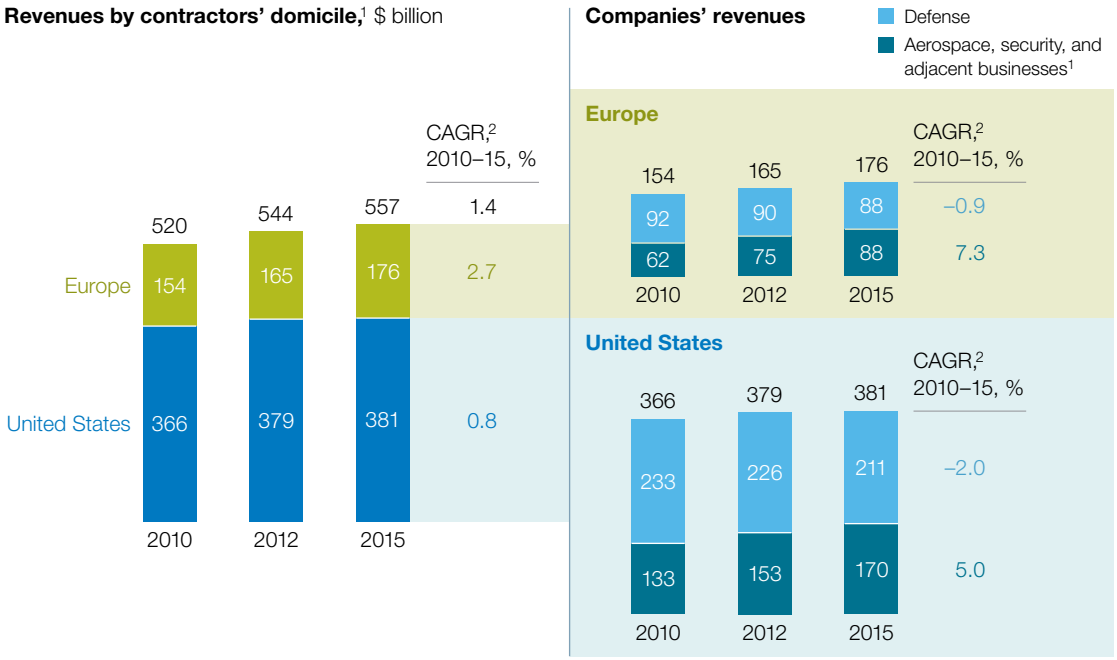
Companies need to understand the international opportunity accessible to them based on their specific capabilities at a detailed level, assess the opportunities alongside those in their core Western markets, and allocate efforts accordingly. However, focusing on international markets might not be the answer for everyone.

Companies need to work out where to focus through a detailed assessment, by country and by program, of the available opportunities. Very often we hear executives aspiring to grow internationally or in a specific region. Sometimes this leads to investing considerable effort in small opportunities, when most of the growth relevant to that company lies in a few programs in a different set of countries.

Executives should study the specific programs and upcoming contracts available in each country and create a set of countries to address, considering each country's needs and objectives, the status of the local defense industry, and the particular country's relationships with other governments. Understanding which countries are big spenders is not enough. At the same time,

Exhibit 6

Companies and analysts project that European contractors will outperform US contractors.



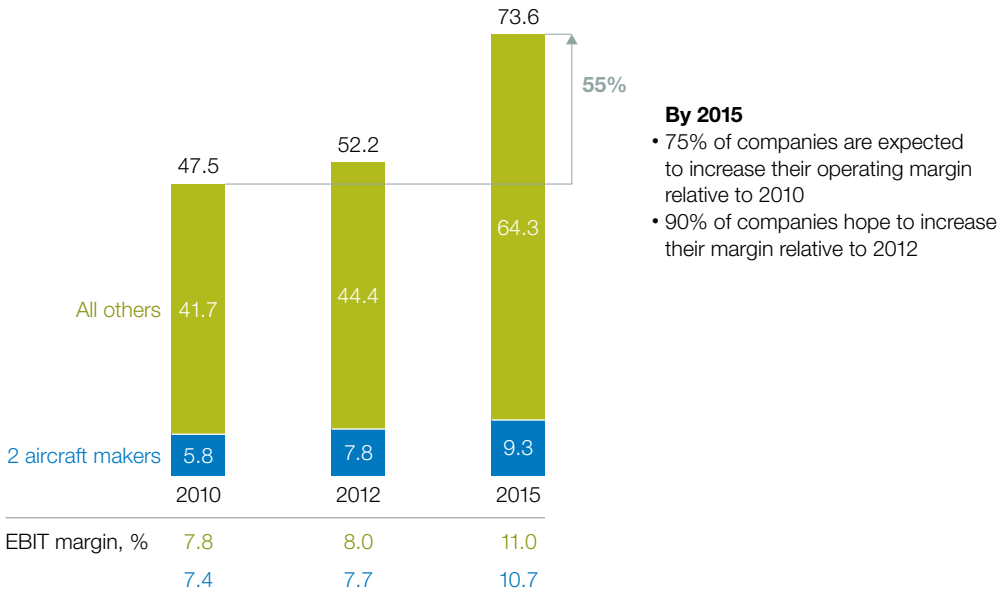
[1] Excludes commercial revenues of 2 large aircraft manufacturers.
[2] Compound annual growth rate. Note that rates may not match yearly values shown, because of rounding.

Source: Analyst reports; annual reports; *Defense News*; McKinsey analysis

Exhibit 7

Companies and analysts are expecting an unprecedented 55 percent growth in profits.

Industry earnings before interest and taxes (EBIT), $ billion



Source: Analyst reports; annual reports; *Defense News*; McKinsey analysis

companies need to assess whether specific programs or tenders are really accessible, given their specific capabilities, products, and relationships. And they need to compare the international opportunities with those in their traditional markets. International sales will not always be at the top of the list when compared with opportunities available in domestic markets or adjacent markets.

This threefold approach results in a prioritized list of opportunities to pursue in international markets. Companies can then work to increase their chances of success, for example, by seeking government support, establishing a local presence in the country, structuring partnerships with local suppliers, suggesting improvements to governments' stated requirements, and developing tailored solutions.

2. Is the offering 'fit for purpose' to meet international needs?

Current products and service offerings, developed for traditional defense customers, do not always meet international customers' needs. Defense companies must understand these customers' specific cost and performance requirements; often this will reveal the need to develop more affordable products. Relying on Western-funded product development might not be enough to win international business.

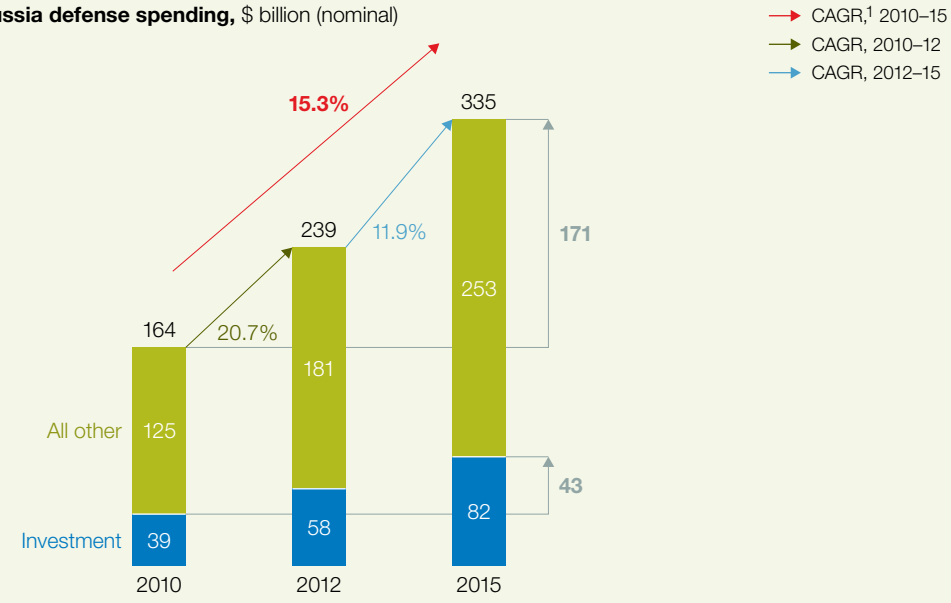
Nonaddressable spending

In recent years, China and Russia have increased their defense spending dramatically in most categories, including investment (exhibit). Indeed, these countries represent a significant portion of the growth in international spending, but this growth is not available to foreign defense primes. These governments do not typically purchase equipment on the open market; they instead procure mostly from state-owned and domestic suppliers. For this reason, we exclude them from our analysis.

Exhibit

China's and Russia's defense spending is growing quickly but is not accessible to foreign firms.

China and Russia defense spending, $ billion (nominal)



[1] Compound annual growth rate. Note that rates may not match yearly values shown, because of rounding.

Source: Ministry-of-defense reports; Teal Group

Historically, defense companies have addressed international opportunities by trying to export products developed for their domestic customers. This has the obvious benefit of leveraging substantial development efforts, selling a ready-to-use and often fully tested product and hence generating profitable business. But it doesn't necessarily meet international customers' budgets.

Companies will need to move to a market demand–based approach to develop affordable products, setting project-cost targets and developing rigorous processes for taking out costs (direct labor, direct material, and indirect) to meet demand requirements at target cost.

This approach begins by working backward from the best possible understanding of customer demand and the price customers will pay and then using this to develop a cost structure that will deliver the products needed at the target cost. This is a new way of working. It starts with the answer—the final price—rather than starting with the product and figuring out the price later. It depends on a realistic view of potential market outcomes and the volumes associated with those outcomes. That, too, is different from the conventional approach. The market demand–based affordability strategy challenges the historical structure of costs and budgets to force the company to take a new position on key trade-offs. Done well, this results in a competitive cost advantage over rivals.

3. Is the organization set up to deliver internationally?

A performing business in Europe or North America needs to evolve to deliver internationally. Companies must set a clear international aspiration: Is it multinational? Is it global? They should then manage strategies, organization structures, and risks accordingly, adapting their operating model and supply chain to win in new markets and leverage the international footprint.

Each defense company needs to set its international ambition and posture. It might, for example, decide it wants to be a Western company with some exports, an international defense company present in multiple countries, or a truly global defense organization. The aspiration should consider the challenges and risks. Growing internationally tests the company's strategy and organization, creating pressure to be locally flexible and adaptable while also following global standards and practices. And in many cases, the pursuit of foreign sales takes defense companies deep into areas of unfamiliar risks that many find difficult to evaluate and manage. Becoming a truly

Defense companies in Europe and North America need to evolve to deliver internationally.

global defense organization will require a global footprint, global supply chain, local capabilities, local partnerships, alliances, and joint ventures.

Once companies know what they want to be, where to go, and what opportunities to pursue, they need to evolve their operating model and organize to compete, succeed, and deliver internationally. Defense companies face organization-design models that range from global to regional and country specific. Companies need to take into account the local market characteristics and satisfy local needs. Unfortunately there is no silver bullet, and no single organization model is right for all companies.

Global organization models can leverage scale and benefit from shared infrastructure (for example, product development, R&D, support functions, and technologies) and maximize access to talent pools, but they may suffer a lack of agility and difficulty in adapting their operations to country-specific needs. On the other side, regional organization models introduce a layer between the global corporate or Western headquarters and the countries that the defense company wants to address. This comes at an extra cost, but regional units can help tailor operations to local business needs and develop relationships, and they can still deliver economies of scale by sharing infrastructure across countries.

Finally, country-specific, locally driven organizations can maximize tailoring and agility, but this may duplicate some infrastructure, increase management complexity, and may not fully exploit the benefits of being a global defense prime. Achieving the internationalization strategy and delivering with an international organization structure might require a journey, for example, from a domestic business with an export-based international presence, which leverages products developed for the domestic customer, to an international business with a multinational presence, and eventually to a global defense business that can develop new products competitively to meet demands.

At each step, companies will need to adapt their management approach; typically, this will include redesigning support functions, governance, controls, and processes such as investment allocation. They will want to be mindful of the powerful economic leverage to be had from shared infrastructure and shared services ranging from R&D centers to procurement functions. The objective is to become a customer-driven organization, one that is more commercial, more agile, and better able to respond competitively to market demands.

4. Does the business have the right people to operate in a completely different environment?

Developed-market defense organizations have plenty of successful managers who have built the business over time. This doesn't mean that they will be successful in establishing a business on the other side of the world. The company's vast pool of skills, knowledge, and experience is an asset, but making the most of it is difficult. Attracting, developing, and deploying talent in new markets at the required pace is a challenge; nevertheless, defense companies must do it to compete.

Deciding where to go and how to organize is not sufficient to succeed. Companies need to get the right talent. Successful developed-market managers are often transferred to foreign

countries to build the business after a successful tender is won through contracted agents. Unfortunately, those managers don't always do well abroad.

The reality of building a local business is complex. Language and culture are only the first barriers. Developed-world defense companies need to build local customer relationships, establish a manufacturing presence, form partnerships, and comply with local regulations and laws. Inevitably, this requires new international and local talent.

But qualified managers are getting harder to find and more expensive as demand grows in emerging markets. Defense companies need to compete for the often limited local management talent in attractive markets across all functions, from human resources and finance to business development, sales, and the supply chain.

Foreign companies need to shape their employee value proposition to attract local talent, for example, by offering recruits the opportunity to work elsewhere in the world during their career, offering global development and specialized training programs, and designing special programs to tackle cultural and linguistic barriers that impede local executives from taking jobs at regional and global levels. In any market, the basic ingredients of a strong employer brand will be competitive compensation; attractive working conditions; managers who develop, engage, and support their staff; and good communication in order to stay integrated with the global organization while retaining some local tailoring.

If a company succeeds at this, entering international markets can pay dividends for the entire firm. Not only could it provide access to a new pool of talent—especially engineers, who are particularly scarce in many markets—but it can also give the company more affordable manufacturing and production resources and more cost-effective resources for support functions and shared services.

5. How should offsets and other regulatory requirements be addressed?

Companies typically look at offsets as a burden and a source of risk along with the extra regulatory challenges attached to entering new markets. Being successful in international markets requires turning offsets and regulation into a source of competitive advantage, while also complying with relevant laws, such as the Foreign Corrupt Practices Act. Offsets can be an important enabler for success in international markets. Companies need to develop sound offset strategies and adapt quickly to shifts in market-access regulation.

Many governments impose industrial-compensation arrangements as a condition of the purchase of goods and services from nondomestic suppliers. Over the past few years, several nations have introduced reforms in their offset policies that are raising the bar for contractors' industrial participation. Some contractors view these offset requirements as "pay to play" instruments and sources of increased risk. There are risks, to be sure, as well as ethical considerations and additional costs. But offsets can also contribute to successful sales in foreign markets.

Offsets can help Western companies tap into markets that would otherwise be difficult to access. Relationships with local partners are part of the table stakes in major military-

About this research

Scope. Our research covered defense spending and revenues worldwide. We reviewed the budgets of 18 significant purchasers of defense equipment, accounting for 83 percent of all addressable military spending worldwide in 2012. We excluded China and Russia because they buy very little equipment from Western firms. We analyzed the revenues of 37 large aerospace and defense companies; together, they account for 84 percent of all defense revenues worldwide.

Period. We reviewed defense budgets and revenues for the period from 2010 to 2013, and we used company statements and analyst reports to estimate the period from 2014 to 2015. Many countries budget for defense on two-, three-, or five-year cycles; we used the current cycle, and for cycles ending in 2014 and 2015, we extrapolated from the current cycle. For the US Department of Defense budget, we used actual outlays for 2010 to 2013 and budgeted outlays for 2014 to 2015 according to the 2014 and 2015 US national defense budget estimates. We did not make any assumptions about the ways in which the Budget Control Act might or might not affect future defense budgets.

Defense spending and revenue definitions. For defense spending, we used actual outlays whenever possible. Outlays most closely represent cash disbursements from governments to their contractors. For revenues, we used sales, not orders, except in a few cases where a company's order book was used to estimate the split between US and international sales. All defense spending and investment figures are nominal, for best comparison with industry revenues in each year of the analysis (2010, 2012, and 2015).

Geographical splits. All defense spending is assumed to take place within the budgeting country. Revenues are recognized according to the geographic base of the customer to which they are booked.

Defense/nondefense split. Many companies do not use these categories in their reporting; some lump together defense and civil revenues, while others lump together civil, commercial, and other adjacent businesses. We have analyzed each company's businesses and made best efforts to segregate defense, commercial, and adjacent-business revenues.

Sources. We called upon several sources in our research: analyst reports; company annual reports; earnings calls; investor presentations; ministry-of-defense documents; *National Defense Budget Estimates for FY 2015*, US Department of Defense, 2014, defense.gov; outlays; press reports; and the Teal Group.

procurement competitions, so it is common for contractors to propose offset agreements aimed at developing industrial relationships through joint production or development. For example, Israeli manufacturers have built a top global position in the export of unmanned aerial vehicles in part by cultivating robust local relationships, including joint ventures in Brazil and other emerging defense markets.

A sound offset strategy starts with context: a company should objectively evaluate the methods that have proved successful in the past—both its own and those of its competitors. Any proposed offsets should be consistent with the company's overall international strategy. Contractors should avoid offset programs that may disrupt operations or limit opportunities in other parts of the company—and those that run afoul of relevant laws, such as the Foreign Corrupt Practices Act. They must understand customer preferences; governments do not always articulate these, and offset teams must perform due diligence to understand their priorities. Offset teams will need detailed knowledge of local acquisition regulations in order to mitigate reputational and legal risks. And defense companies must understand who the most important stakeholders are and how to engage with them effectively.

The aerospace and defense industry is expecting to earn revenues that international government customers do not plan to spend. We think it unlikely that the industry as a whole will achieve its growth objectives. But that doesn't mean any given company cannot succeed, provided it responds vigorously to the five challenges outlined above.

[1] All budget figures for the US Department of Defense in this article are outlays (see sidebar "About this research").
[2] This figure is slightly more than Department of Defense outlays because defense businesses capture spending from other government departments and because subcontracting results in double counting of a small amount of revenues.
[3] We exclude two large commercial aircraft makers from this analysis; the two companies account for a large share of commercial revenues and have grown even faster than their commercially focused peers. Including them would make growth and volumes in commercial businesses seem even greater than they already are. The two companies also have large defense businesses, and we include them in the defense-revenue analyses in this article.

David Chinn is a director in McKinsey's London office, where **Giacomo Sonnino** is an associate principal; **Kevin Dehoff** is a director in the New York office. Copyright © 2014 McKinsey & Company. All rights reserved.

Neil Webb

Training NATO for an uncertain future: An interview with Major General Erhard Bühler

In facing potential threats, being lean and agile will be critical.

Wolff Sintern

Major General Erhard Bühler of the German Army is the commander of the North Atlantic Treaty Organization (NATO) Joint Warfare Centre in Stavanger, Norway. The center specializes in multi-tier and multinational operational training and exercises, as well as capability development through simulation, experiments, joint analysis, and review of lessons learned. It is the main sponsor of full-spectrum joint operational warfare training within NATO. In April 2014, McKinsey's Wolff Sintern sat down with Major General Bühler to discuss the future of training and exercises in NATO.

McKinsey on Government: *NATO is once more going through a period of fundamental change. With a lot of uncertainty on the horizon, how does NATO plan strategically for the next few years?*

Major General Erhard Bühler: We will have to prepare NATO forces increasingly for the unexpected, which sounds impossible but can be done. No one can say with any certainty what challenges NATO forces will face in coming years—that's been proved time and time again. As a result, we have to prepare troops for a wide spectrum of operational challenges, ranging from collective defense of member states to expeditionary challenges and those kinds of scenarios where different threats overlap. What we can say for sure is that NATO nations will have to

become ever more interoperable if NATO wants to face up to this wide spectrum of challenges. Thus, two things are evident to me. First, greater interoperability of equipment and procedures is the way forward for NATO. Second, today's challenges are not set in stone. This makes it necessary for us to anticipate issues and work to become ever more lean and agile in order to be able to face up to a variety of potential threats.

McKinsey on Government: *Austerity and declining budgets have dominated the headlines for several years now, and the effects on military personnel and equipment numbers are clearly visible. How is NATO dealing with this challenge strategically?*

Major General Erhard Bühler: The days of large standing armies and each nation being able to cover the full spectrum of military forces are definitely over. To operate effectively together, national forces have to participate in joint multinational training and exercises. What we seek is symbiosis. It is only through greater collaboration that NATO's member nations can enjoy the same level of security they are used to. And in the foreseeable future, there is no other entity that can provide the platform for collaboration, with the required scope and quality of multinational training and exercises, that NATO can.

McKinsey on Government: *A lot of emphasis remains on capability development and the Connected Forces Initiative. What role can training and exercises play to promote these activities?*

Major General Erhard Bühler: Indeed, the Connected Forces Initiative is *the* initiative for NATO right now—the aim of which is an ever more integrated and capable NATO force. Training and exercises can eventually become the catalyst for the implementation of the Connected Forces Initiative. Training and exercises may also enhance alliance efforts to renew the capability-development process. NATO is aware that there is a need to revisit the way

Major General Erhard Bühler

Vital statistics
Lives in Stavanger, Norway

Married, with 1 child

Education
Graduated from the University of the Federal Armed Forces in Hamburg, Germany, with a degree in mechanical engineering

Completed command and general-staff training at Federal Armed Forces Command and General Staff College in Hamburg, Germany

Completed US command and general-staff course at the US Army Command and General Staff College in Fort Leavenworth, Kansas

Career highlights
Joint Warfare Centre, North Atlantic Treaty Organization (NATO)
Commander (2013–present)

Kosovo Force, NATO
Commander (2010–11)

Commander of 9th German KFOR contingent (2004)

German Army
Commander of the 10th Armoured Division (2009–13)

German Federal Ministry of Defence
Director of joint operations staff (2008–09)

Senior military assistant to the minister of defense (2001–03)

we develop capabilities. If we succeed in harmonizing our capability development with our training and exercise processes, we see great potential future benefit; a revitalized capability-development process will be even more driven by operational-level needs. I believe that training and exercises can become the operational-level lever: a kind of laboratory or test bed for capability development, where the expected increase to six major exercises per year under the Connected Forces Initiative framework provides the necessary frequency to iterate.

McKinsey on Government: *You are commander of NATO's Joint Warfare Centre—the operational element within NATO's training organization, which conducts large-scale exercises such as the Trident Exercises and Cold*

NATO's Joint Warfare Centre: Mission and role

The North Atlantic Treaty Organization (NATO) Joint Warfare Centre is the main provider of training for full-spectrum joint operational-level warfare. Its objective is to enhance NATO's interoperability, effectiveness, and capabilities. It supports the Allied Command Transformation on lessons learned, experimentation, and concept and doctrine development, as well as simulation, modeling, and new technologies. To do this, the Joint Warfare Centre not only facilitates and provides training and exercises but also serves as a center of competence for warfare.

Specifically, it fulfills three main roles and responsibilities:

- joint and combined training of operational commanders and battle staff, including preparation, management, execution, and enhancement of training
- joint experimentation and development of concepts, doctrines, and standards, for example, to drive interoperability among nations
- evaluation of joint-forces training in assistance of the Allied Command Operations, including certification according to NATO standards

The International Security Assistance Force–related training and exercises account for a major part of the Joint Warfare Centre's current business. As this force's mission ends in 2014, the Joint Warfare Centre's tasks will shift significantly—with an enhanced role for training and exercises in preparing the alliance for potential scenarios. Additionally, with both NATO's Smart Defence and Connected Forces Initiative calling for increased interoperability of forces on a multitier and multinational level, the Allied Command Transformation and therefore the Joint Warfare Centre are the center of gravity for the success of these concepts.

"The alliance is a very large and powerful force for security and order in the world, but it can only retain its preeminent status if it evolves its self-understanding as an agile, lean learning organization."

Response and which is charged with preparing NATO forces for the future (see sidebar, "NATO's Joint Warfare Centre: Mission and role"). In that role, how would you say warfare is changing?

Major General Erhard Bühler: That is a big question—and precisely what we grapple with at the Joint Warfare Centre. The spectrum of potential challenges is ever widening. Because of that, and because of the increasing complexity of operational conduct, NATO operational thought finds itself at a turning point. Our operational thinking will have to respond by cutting across sectors (intelligence, police, administration, politics, and development), increasing our multinational integration, and developing a shared understanding within NATO that we are the driver of a learning organization.

McKinsey on Government: *What implications do you see for NATO's training and exercises from the uncertain nature of the alliance's future challenges?*

Major General Erhard Bühler: While training to prepare for Afghanistan will diminish, the complexity of exercise scenarios will increase and the diversity of scenarios will have to increase as well; put another way, the quantity and quality of NATO training and exercises will have to go up. In addition, the time available to prepare NATO forces for future threat scenarios will diminish. We will have to do more and more complex stuff in less time. To provide examples: with NATO's command-structure reform, we have to train 19 headquarters groups (land, air, maritime, and single service). High-intensity, large-scale exercises have to prepare forces by providing interoperational experience. These exercises must also provide experience in countering overlapping threats, such as deterring conventional forces while being under threat of ballistic missiles and having to cope with local insurgents. And the exercises must do all of that for different geographies.

McKinsey on Government: *You have recently undergone an internal transformation to prepare the Joint Warfare Centre for this. What lessons would you derive from that for NATO's overall and larger transformation?*

Major General Erhard Bühler: Both the Joint Warfare Centre and NATO have become too static. The world is changing and NATO has to adapt. The alliance is a very large and powerful force for security and order in the world, but it can only retain its preeminent status if it evolves its self-understanding as an agile, lean learning organization. We need to reinvigorate and reinforce our processes. This has to be reflected

at every level and calls for a great effort by everyone within NATO, be it military or civilian staff. We have seen significant changes toward this goal in the past, and I am confident that NATO will adapt to the new challenges on the horizon and beyond.

McKinsey on Government: *In the Joint Warfare Centre's transformation, you explored the question of whether best practices from industry could be applied. What was your experience?*

Major General Erhard Bühler: We can learn a lot from industry and the business world. Many business tools and concepts are applicable to the military world—not necessarily as they are currently understood but with some adaptation. Lean principles, resource-management tools, and change-management concepts can clearly find a home in the military. Military mind-sets are different, of course, and developing a military view on core products, efficiency, value propositions, and a project-oriented structure, among other such business ideas, is definitely a stretch in the beginning. However, we found that these concepts helped us focus on the important items. The military is conservative and traditional, but when it gets down to getting things done, we can be surprisingly open minded in exploring new concepts and approaches.

Wolff Sintern is a principal in McKinsey's Düsseldorf office. Copyright © 2014 McKinsey & Company. All rights reserved.

Neil Webb

Defense outlook 2017: A global survey of defense-industry executives

Business leaders are growing more optimistic and think they can head off challenges from commercial firms.

John Dowdy and Elizabeth Oakes

In October 2014, we conducted a second survey of senior executives from aerospace and defense companies around the globe to take the pulse of the industry and its outlook for the next three years. Thirty-seven industry leaders responded. More than one-third of the respondents are C-level executives, while most others hold positions as senior vice presidents or managing directors. The respondents represent business activity across Asia, Europe, and North and South America. Our questions covered global defense spending, industry trends, challenges in the current business climate, and opportunities for continued growth.

The research yielded some fresh insights and a couple of surprises. While the majority of those who responded to our previous survey in December 2012 anticipated a marked decline in global defense spending, the outlook now is improved. Nearly two-thirds of those surveyed in 2014 believe that global defense spending will stabilize or even return to a modest level of growth. That growth, however, will come in unexpected ways, outside of traditional home markets and in new segments. In this article, we look at the market shifts that respondents identified and the areas where companies expect to find pockets of growth.

A shifting market

Opinions on the direction of global defense spending range from slightly positive to slightly

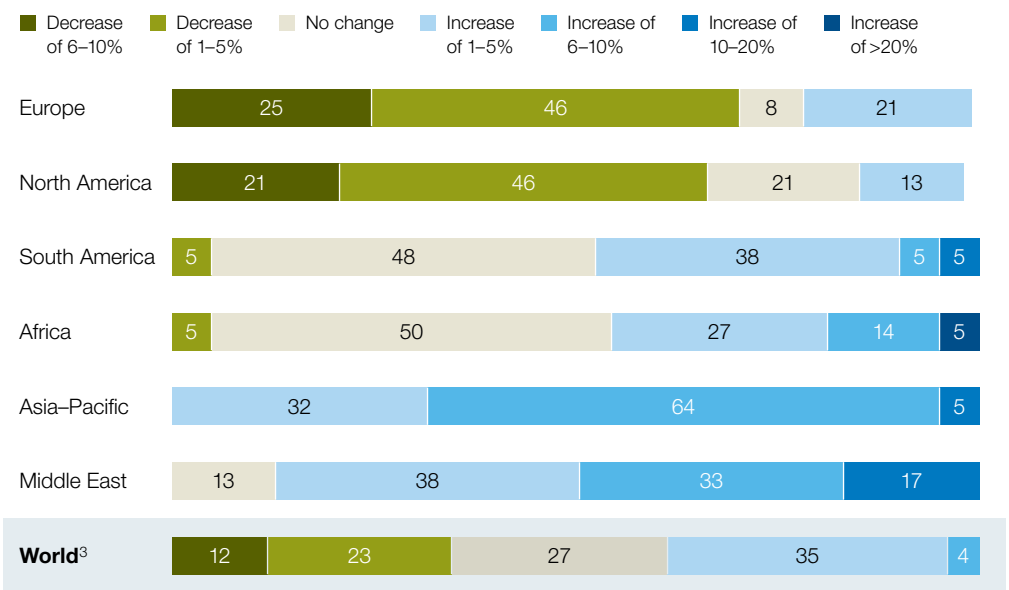
negative (Exhibit 1). But regional trends are much clearer. A large portion of executives still believe that defense spending will continue to decline across Europe and North America, although the rate of that decline is less than previously predicted. In 2012, the largest number of executives believed that defense spending would decline across both Europe and North America by 10 to 20 percent; in 2014, the biggest cohort believes that the drop will be only 1 to 5 percent. While views of Africa and South America are a bit more varied, there is now clearly less optimism about growth. About 40 percent of respondents believe that defense spending will remain the same in these geographies, whereas the bulk of respondents in 2012 thought it would increase. Finally, the outlook for both Asia–Pacific and the Middle East remains positive. As in 2012, defense executives in 2014 believe that spending in both regions will continue to grow by 6 to 10 percent in the next three years.

Declining budgets in the Western world and growth in Asia and the Middle East give rise to an overwhelming trend in the defense industry: affordability. About 85 percent

Exhibit 1

Expected changes in defense spending vary for different regions of the world.

% of respondents expecting a decrease, no change, or an increase,[1] n = 21–26[2]



[1]Figures do not sum to 100%, because of rounding.
[2]For survey questions, n varies between 21 and 26.
[3]Respondents were not required to rationalize their responses about global spending patterns with their responses about regions.

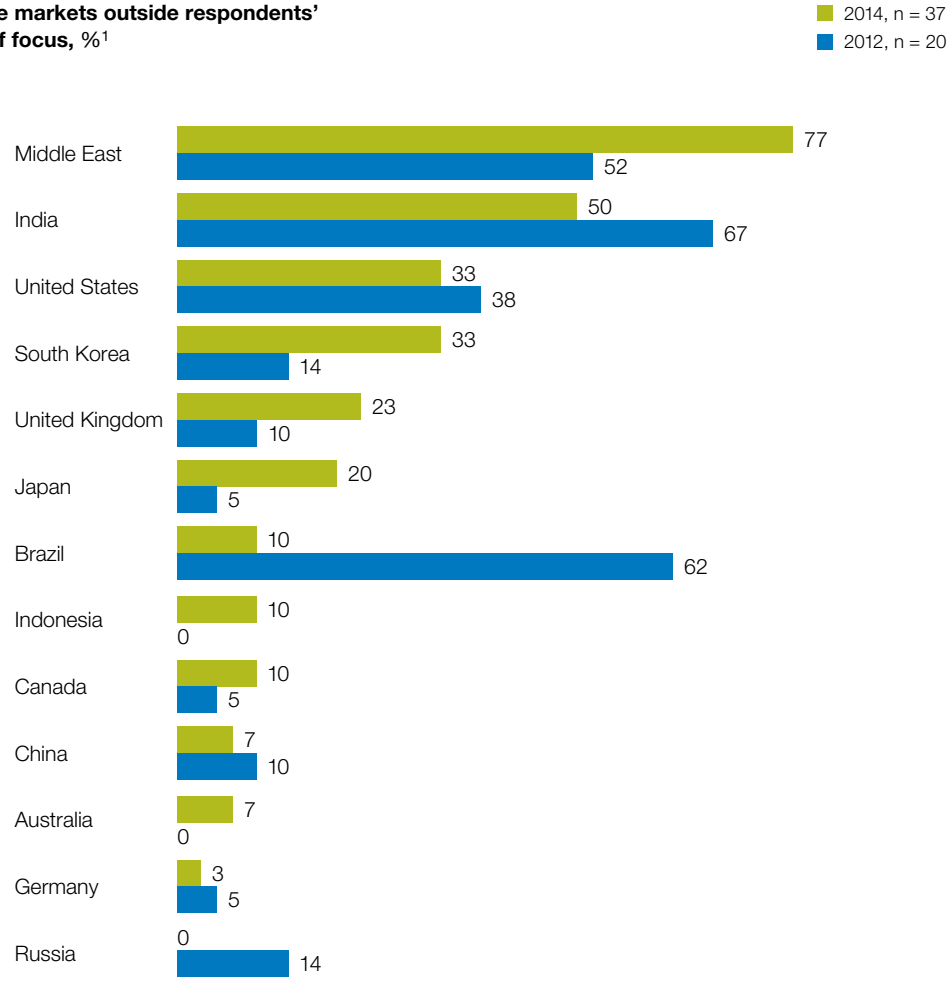
Source: Oct 2014 McKinsey survey of defense-industry executives

of executives believe that their customers will shift their focus from procuring systems with the highest possible performance to ones that are more affordable. Nearly all of the respondents named affordability as a top-five issue in their companies. More than two-thirds of defense executives find that their companies' efforts to make their products and services more affordable have been moderately successful, and about the same amount believe that suppliers will be able to change their internal processes to deliver more affordable products.

Exhibit 2

The Middle East is today's most attractive international market; Brazil has fallen from favor.

Most attractive markets outside respondents' current area of focus, %[1]



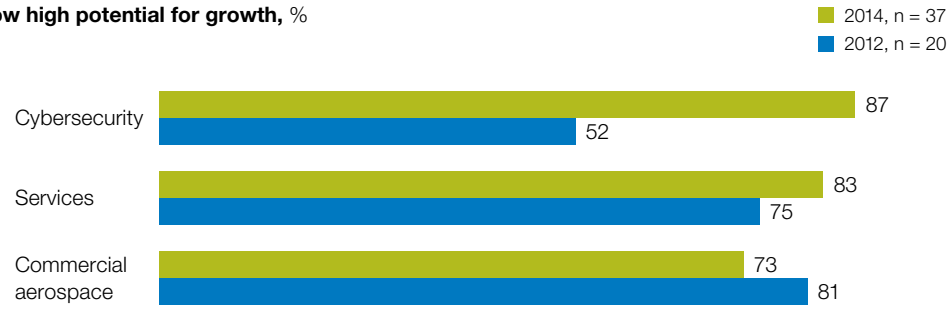
[1]Respondents were asked to identify the 3 most attractive markets outside their area of focus.

Source: Dec 2012 and Oct 2014 McKinsey surveys of defense-industry executives

Exhibit 3

Companies now say cybersecurity has the most growth potential.

Areas that show high potential for growth, %



Source: Dec 2012 and Oct 2014 McKinsey surveys of defense-industry executives

Pockets of growth

We asked defense leaders about the most attractive new market locations and new lines of business within their companies. International growth is an overwhelming goal (see "International aspirations: Why international sales may not meet defense companies' expectations," on page 10, for more on international sales and affordability). All but one executive said their companies are seeking increased international growth in the next one to three years. Major challenges to international growth include political risks such as export-control regulations and offset requirements, technology-transfer requirements, and intellectual-property issues. Many of these challenges also preoccupied leaders in 2012. But today they are less concerned about their companies' inherent abilities to make sales in international markets and more about the political landscapes of the customer nations.

Defense executives believe that the Middle East, India, and the United States are the three most attractive markets; South Korea and the United Kingdom round out the top five. Two large shifts in opinion have taken place since 2012—Brazil and Russia are now seen as less attractive (Exhibit 2).

Growth through new lines of business is also anticipated (Exhibit 3). But two of the most prominent are also fraught with uncertainty. When asked if their companies were seeking increased cybersecurity growth in the next three years, about nine out of ten executives agreed. However, they also identified a long list of challenges, including market immaturity, a fragmented customer base, regulatory uncertainty, competition from nondefense players, and unclear market trends and leaders.

As in 2012, most companies expect services to produce a larger share of revenue in the near future. More than two-thirds of respondents believe that their services businesses will continue to grow, citing outsourcing, affordability, and performance-based logistics as the biggest opportunities. To take advantage will not be easy, though; executives say they are creating specialized business areas, developing truly globalized decision making, entering into risk-

sharing agreements, and pursuing some strategic partnering.

In perhaps the most surprising result of this survey, only half of those polled believe that commercial and nontraditional players will disrupt their companies' products and services. The rest are unconcerned. Those who expect competition from the outside see cybersecurity, gaming technologies, unmanned equipment, and satellite launch as the products most ripe for disruption.

More than 80 percent of defense executives expect continued growth in commercial aerospace, but many seek to retain a balance between their commercial and defense portfolios. When asked about that balance, half say that portfolios will move to a bias toward commercial. Interestingly, a third of executives believe that defense companies will seek to retain an even balance between defense and commercial products.

An industry in flux

In an effort to keep pace with a dynamic market, industry executives predict shifts in the way they manage their portfolios and activities. Almost all executives expect that the rate at which defense companies acquire and/or divest businesses will increase, although opinions are divided about just how much faster changes will happen. The largest number of executives—more than 40 percent—expect moderate increases in the next three years. As in 2012, a heavy majority in 2014 predict that their companies will be involved in both M&A and divestment activities in the short term. Views on consolidation of the defense industry are divided: nearly half believe that major consolidation will occur, but the rest are doubtful.

• • •

The changes from 2012 to 2014 are clear. Defense executives are more aligned and more optimistic about the global defense market. In their view, defense spending is shifting rather than declining outright. Growth is uncertain but achievable. When asked how many points of margin improvement they were targeting over the next three years, all respondents answered with modest growth of between 1 and 5 percent. Identifying the main trends and harnessing the shifts can lead to continued growth in the defense industry. The outlook for 2017 is increasingly international and complex, but it is not without opportunity.

John Dowdy is a director in McKinsey's London office, where **Elizabeth Oakes** is a specialist.
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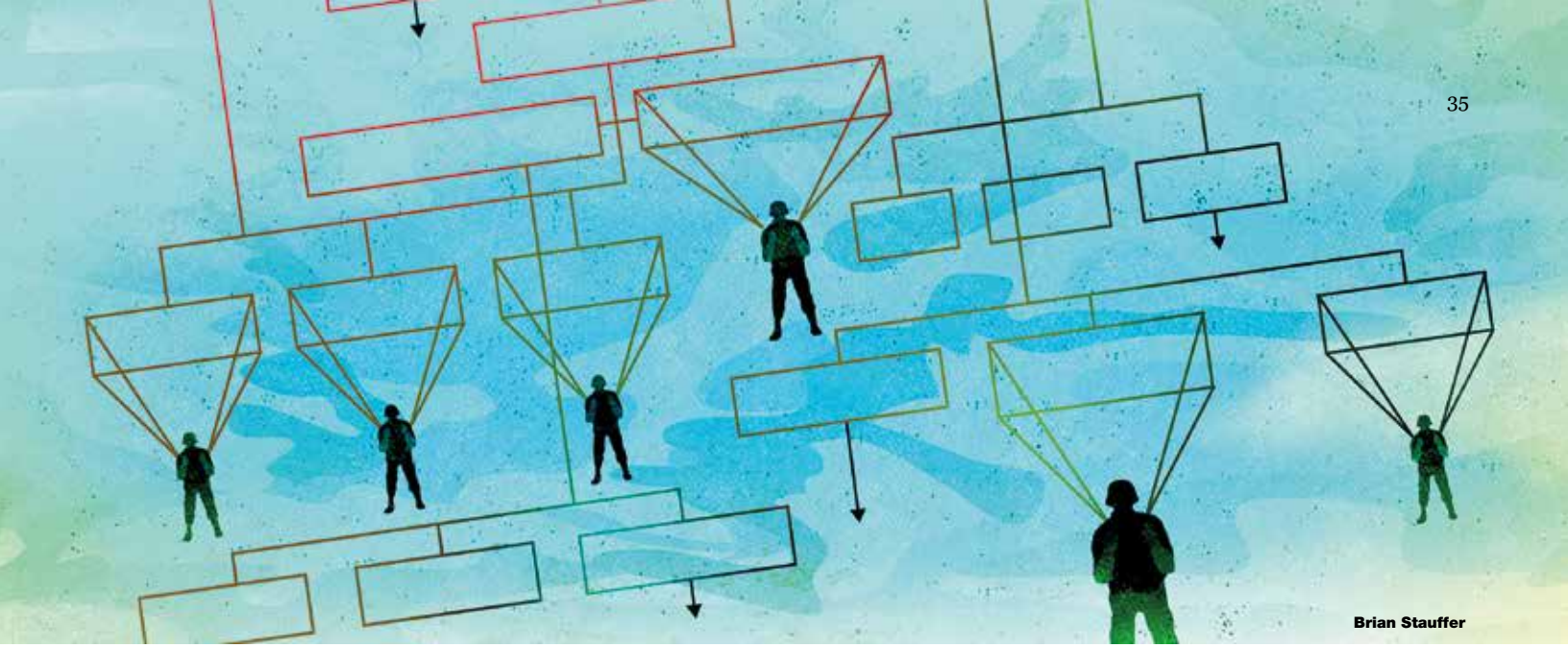

Brian Stauffer

Reform as an imperative:
An interview with Vice Admiral Eric Chaplet

The new head of performance discusses the pace of change in the French military and the differences between management and command.

Guillaume de Ranieri

After two years as chief of the support department for France's defense staff, Vice Admiral Eric Chaplet now heads its newly formed performance department. McKinsey's Guillaume de Ranieri spoke with the vice admiral to find out what the motto "act together, differently, as well as we can" means—and doesn't mean—for France's armed forces.

McKinsey on Government: *The French defense staff has just been reorganized and you now head the newly formed performance department. Why was this department created, and what is your role?*

Vice Admiral Eric Chaplet: As is the case with many entities of the Ministry of Defense, reform of the defense staff has two main objectives: modernization and rationalization. The performance department will provide our chief of defense and his staff better means to set strategic priorities, guide our action, and make decisions. My job is to help the chief of defense organize and manage the forces, departments, and services placed under his authority. I must ensure that it all fits together and performs at the highest possible level, particularly in the field of support.

McKinsey on Government: *France's armed forces have been undergoing a nearly continuous transformation since 1996, when conscription was suspended. But reform efforts have accelerated in the past few months. What was the impetus for these most recent changes,*

and what do they mean for the future of the French military?

Vice Admiral Eric Chaplet: The world is continuously changing, and we have to respond to the evolving context in which we operate. So there are many reasons for our transformation.

First, there are strategic reasons, including the appearance of new risks or threats, as well as shifts in partnerships. Then, there are technological leaps, which may entail the development of new capabilities—drones and cyberspace, for example—or changes that shift the interaction between partners or against adversaries. And of course, the economy is another cause of transformation: positive economic growth allows for modernization and procurement of military capabilities, whereas an economic crisis generates great budgetary pressure.

In essence, reform means adapting our structures, optimizing our resources, and modifying our procedures so that our forces can accomplish their missions even if new constraints appear. This is a continuous process. Adaptation is essential in combat action—for military people, this relates to the ancient discussion about the sword and the shield. For us, constant change is both a fact of life and a state of mind.

But back to your question. This most recent phase of our transformation has been developed as a result of two overarching documents, starting with the *French White Paper: Defence and National Security 2013*,[1] which sets out our national ambition and a new model for the armed forces through 2025. The second is the Military Planning Act,[2] which sets the white paper into law and describes tangible actions for each one-year period through 2019.

As for what it all means for the French military—whatever changes we implement, our armed forces must always be able to perform three major tasks: protection of France and national territories, nuclear deterrence, and intervention when decided by the president. We therefore have to maintain the full range of our armed forces' capabilities. We will always need soldiers, sailors, and airmen who are well equipped, well trained, and highly motivated—keeping in mind that in today's world they must know how to use the force appropriately. That will not change.

McKinsey on Government: *Governments—including ministries of defense—are grappling with shrinking budgets. How will you implement the reforms?*

Vice Admiral Eric Chaplet: As the chief of defense often says, we must "act together, differently, and as well as we can." Together, because reform is a collective effort. Differently, because true change requires imagination and innovation. And as well as we can, because we must be realistic and pragmatic, given today's constraints.

It is a real challenge to continue to work and accomplish our missions while we are going through these reforms, especially given the reduction in our resources. We are downsizing, closing military bases, and moving or shutting down units. We are remodeling our structures and adapting the procedures that our forces use to achieve their missions. We are modernizing our armed forces by replacing outdated, worn out, or inadequate capabilities, and we are developing new capabilities that will be necessary for future operations: intelligence, cyber-defense, drones, special forces, and long-range strikes, for example.

McKinsey on Government: *Such reforms are difficult to implement. How will you balance the need for cuts with the need for well-prepared armed forces?*

Vice Admiral Eric Chaplet: It is our duty to implement reforms in a way that ensures our forces can still achieve their missions. Operational success depends on our ability to give our forces in the field what they need. The reform will affect support, among other areas. That will translate, for example, to a reduction in the size of central headquarters, which in turn means transferring more responsibilities to officers on local bases. Like our chief of defense, I am a great supporter of lean, responsive teams that understand today's world is both faster and more complex—a world of split-second decision making.

McKinsey on Government: *How will you do this, exactly? From a local, ground perspective, what will the reforms look like?*

Vice Admiral Eric Chaplet: Today, more than 20,000 members of the armed forces are deployed outside mainland France. We have a military presence on four continents and on every ocean in the world. Reforms will be very deep; when fully implemented, we will have cut ministry personnel by 80,000 in a ten-year time frame. In such a difficult economic context, that is the price we have to pay to maintain the defense that France needs—armed forces that have the full range of skills and capabilities necessary to protect France and to ensure our country is able to play a leadership role in Europe.

The reform has many moving parts, some of which are extremely innovative—and it goes well beyond personnel cuts. For example, the Balard project, which will co-locate the top-level entities of the ministry, will help introduce a new model of governance for the entire Ministry of Defense. It will also allow the chief of

Vice Admiral Eric Chaplet

Vital statistics
Born August 2, 1957

Married, with 3 children

Education
Received qualifications in underwater warfare and nuclear reactors

Completed staff course at Royal Naval College, Greenwich

Earned an MA in defense studies from King's College, London

Received diploma from the National Institute for Nuclear Science and Technology, Paris

Career highlights
French Ministry of Defense (2012–present)
Deputy chief of defense staff

French Navy (1977–present)
Founder, concepts and doctrines center (2007)

Captain, nuclear ballistic-missile submarine *Le Téméraire* (2001–03)

Captain, nuclear attack submarine *Emeraude* (1991–94)

Fast facts
Officer of the National Order of the Legion of Honour

Officer of the National Order of Merit

Served on 10 submarines and surface ships

defense to have at his disposal a modern, improved, better-integrated headquarters.

McKinsey on Government: *What will be the role of the remaining defense staff?*

Vice Admiral Eric Chaplet: Defense staff must lead by example, which means making sure that just like frontline personnel, people are focused on their core missions. In this case, we are talking about operations, military planning and programming, strategic performance management, and international military relations. Day-to-day management will be assigned to satellite entities and organizations, which will have as much maneuverability as they need to meet their responsibilities. There is no way you can find all the answers to frontline problems in an office in Paris.

McKinsey on Government: *Efforts are already under way. What has been your progress to date?*

Vice Admiral Eric Chaplet: Our first priority is to ensure operational success. Our second priority is change management throughout the reform process. At every level, leaders are paying great attention to personnel since they are the ones who bear most of the consequences of this transformation. In that sense, morale must be carefully taken into consideration. Our third priority is to ensure proper preparation of our support and environment personnel so we can implement the reform in a way that ensures our forces in the field have all the resources they need to meet their operational goals. So far, the reform has not affected our ability to plan and conduct operations, as our commitments in the Central African Republic, the Levant, Mali, and the Sahel-Saharan region have shown.

McKinsey on Government: *You have spent much of your military career in management roles. How does being an administrator compare with military command?*

Vice Admiral Eric Chaplet: Management and command are not opposite. In fact, they are closely related. The nature of the mission and the specific circumstances dictate whether a soldier is commanding or managing. There cannot be a clear and definite distinction between management and command, because both approaches contribute to the achievement of the same goal: success in operations.

Management as a concept is primarily about creating a collective dynamic to achieve common aims where performance and optimum use of resources are a constant concern. This is particularly relevant during a transformation. The keys to success are to correctly identify the needs and to strive to meet those needs appropriately. But management as a concept is pertinent only when it comes to generating and preparing armed forces.

“There is no way you can find all the answers to frontline problems in an office in Paris.”

Planning and conducting military operations is a much different issue because of the nature and challenge of military operations. In the battlefield, human lives and sometimes vital national interests are at stake. Under these circumstances, command is more important than management, and effectiveness is more important than efficiency. In the field, the military commander commands. This requires true commitment from everyone—the commander and the men and women on the battlefield. Orders are better implemented when clearly understood. This level of commitment is a key factor for success.

That said, the foundations of military command and business management are very similar. The qualities that make good officers also make good managers, and both groups share a lot of the same potential pitfalls, because ultimately both jobs are about human relations. Whatever the circumstances, it's always about getting people to work together to complete a mission. Knowing your staff, understanding their capacities and aspirations, and caring for each of them—even those whose capabilities are more limited—are the basic rules of the job.

[1] *French White Paper: Defence and National Security 2013*, République Française, 2013, defense.gouv.fr.
[2] 2014–2019 Military Planning Act, French Ministry of Defense, 2014, defense.gouv.fr.

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Neil Webb

Five principles to manage change in the military

Two change-management experts offer guidance on moving from the what to the how.

David Chinn and John Dowdy

Defense spending has been under pressure for some time now in the developed world. After climbing dramatically for the better part of a decade in the aftermath of September 11, 2001, defense spending began to fall in many countries after the global financial crisis of 2008. European members of the North Atlantic Treaty Organization were the first to make cuts, with total spending falling by $37 billion from the high-water mark in 2008 through 2012, and a further $4 billion in cuts between 2012 and 2015 is expected. Even the United States, where spending continued to rise until 2011, plans to reduce spending by about $65 billion between 2012 and 2015. The pressure of trying to squeeze more military capability from declining defense dollars has been with us for a number of years and seems likely to continue.

It's not that hard for reasonable people to agree on a set of steps that militaries must take to cope with the tremendous pressures they face today. In the United States, for example, in June 2013, a bipartisan group of defense analysts agreed on an agenda of changes for the US Department of Defense. In Europe, many militaries have long agreed in principle to the pooling and sharing of equipment.

However, acting on the agenda is much harder, especially in today's complex environment. The initiatives that militaries are contemplating—

intensive, programmatic, cross-discipline, and often cross-service changes to fundamental processes such as procurement, logistics, and maintenance—are not minor adjustments. The changes these initiatives entail are transformational, not incremental, and require major shifts in mind-sets, behaviors, and capabilities.

Successfully implementing this type of transformational change is not easy; indeed, the majority of transformation programs in both the public and private sector fail. Our recent survey of almost 1,000 leaders and senior employees in more than 30 US government agencies found that only 40 percent believed that their transformation programs succeeded.

However, our experience with large-scale transformation programs in defense organizations around the world has taught us five lessons that can help contribute to the success of a defense transformation.

Start at the sharp end. Defense leaders are concerned first and foremost with preparing, deploying, and sustaining forces to deliver operational effect. Change programs in defense that start with operational effectiveness create stronger engagement and are more likely to succeed than those focused primarily on cost reduction. The United Kingdom's work on end-to-end logistics serves as a good example. Rather than focusing primarily on cost reduction, the program set out to deliver a number of important operational improvements. These included reducing the deployed footprint, improving supply-chain performance, and increasing platform availability. By proposing to deliver a superior operational solution, the program secured the full support of operational commanders.

As a result of this work, delivery time to bases in the United Kingdom and Germany decreased from 30 days to 7 days, among other effects. In Afghanistan, customer wait time was reduced by 15 days. In almost all of the areas investigated, the program also delivered a more cost-effective solution. This served to prove that a better solution is usually also a cheaper one, though the converse is not always true. In its annual report and accounts for 2003–04, the UK Ministry of Defence reported that the end-to-end logistics review both improved logistics effectiveness and generated savings for investment in other priorities.

Similarly, in its restructuring as part of the Danish Defence Agreement (Forsvarsforlig) 2005–09, the Danish Defence set out to move from a static, defensive posture to one that could better support expeditionary missions abroad. The Danish Ministry of Defence described the situation and the work it did: "The support structures, the tail, had grown out of proportion, and the operational structures, the teeth, had reached a level of close to irrelevance. The restructuring from scratch entails a change in emphasis in order to bring the priorities from 40 percent operational capabilities and 60 percent support structures to 60 percent operational capabilities and 40 percent support structure."[1] In the process of designing a more deployable force, the Danish military reduced support costs by a third.

Lead through the line. In a typical transformation program, a project team—often working in relative isolation—defines the program's objectives, designs initiatives, and expects personnel on the ground to implement them. This is a mistake, particularly in military organizations where, in our experience, commanders often prefer to give up budget rather than authority. In contrast,

leaders of successful defense transformations empower line personnel, set clear expectations of them, and hold them accountable for the transformation's success within the established chain of command. The UK's Defence Logistics Transformation Programme was particularly successful in this regard. Warfighters were embedded into each of the project teams and helped shape the specific recommendations. Suggested changes were then vetted with the appropriate frontline commanders, who were able to quiz their own embedded staff about the suitability of the resulting initiatives. An audit of the program by the UK Office of Government Commerce found "the programme appears to have been notably successful, through a structure of programme boards, in obtaining buy-in at senior levels in the frontline commands whose full involvement in implementing the change will be vital to success."[2] Leading change programs "through the line" in this way capitalizes on the can-do attitude of military culture, empowering officers to hit aggressive targets set through the chain of command.

Resist the urge to reorganize; start with quick wins. When embarking on a transformation program, it can be tempting to focus first on reorganization. But an initial emphasis on roles, responsibilities, and reporting often delivers few results. Leaders of successful defense transformations resist the urge to reorganize; they focus first on securing successes that can make a big difference to the momentum of a program. They specifically aim to achieve quick wins, often through targeted pilots, over the first three to six months. Many of these initial successes can then be turned into transformational change across the organization.

In one example from 2009, a defense ministry conducted a diagnostic to assess the quality of procurement processes, organization structures, and outputs in its defense establishment. The diagnostic also assessed the value received for expenditures and the scale of the opportunity for achieving efficiencies. Detailed analyses of six categories covering approximately one-third of nonequipment purchasing identified the potential for annual savings as 8 to 10 percent. The diagnostic homed in on three root causes of inefficiencies. First, the defense establishment lacked a single point of accountability for each category. No function or individual in the organization had visibility into the cost implications of decisions made at each step of the process. Second, the absence of performance metrics resulted in an insufficient focus on cost efficiency. Third, a series of organizational, process, and budgetary barriers impeded

Leaders of successful defense transformations resist the urge to reorganize; they focus first on securing successes that can make a big difference to the momentum of a program.

efforts to capture scale benefits. The ministry piloted several initiatives to address these inefficiencies in four nonequipment categories. For each category, it created an integrated category-management team. Based on the success of this effort, it then conducted a major overhaul of the budgeting process and redesigned the purchasing organization by appointing a "lead purchaser" to manage each generic category. By running the pilots first, it was able to point to its success to overcome resistance within the organization.

Expect (and plan to overcome) resistance to change. B. H. Liddell Hart probably said it best: "The only thing harder than getting a new idea into the military mind is to get an old one out."[3] Many military leaders would agree that their organizations are highly resistant to change as a result of their size, complexity, and culture. Yet despite a general awareness of this challenge, even seasoned defense leaders underestimate the degree of inertia and resistance to change within their organization. Leaders of successful defense transformations take an end-to-end approach to overcome this inertia in two ways. First, they set a clear vision and ambition for the transformation—one that emphasizes the link to the organization's overall mission, clarifies why the program is necessary, and outlines a journey over the coming years that resonates within the organization. When the Danish Defence restructured to adjust to a more expeditionary posture, it set an ambitious goal to reduce support costs by a third while maintaining output, a target reached as promised within four years. The savings were required to fund a series of important increases in deployable forces, which served to secure support from operational commanders. Second, leaders of successful transformations provide credible and visible commitment to the transformation from top-level leadership. The United Kingdom's end-to-end review of air and land logistics, for example, was jointly led by the vice chief of the defense staff and the Ministry of Defence's second permanent undersecretary.

Invest in building capabilities. Building the right capabilities is a prerequisite to achieving and sustaining change in any organization. Among US government leaders who reported limited success in their change efforts, 75 percent said that the right capabilities were not present. In many defense ministries, leaders rise through the ranks based on a substantial body of excellent work that demonstrates mastery of core military and leadership skills critical to warfighting. But achieving and sustaining change often requires not military but management capabilities

in fields such as project management, procurement, and product development. Successful transformation programs first define the core and functional capabilities required and then invest in building these capabilities using programs that follow best-practice adult-learning principles. Such approaches, which are familiar to the military from its combat-skill development, can be six to seven times more effective than conventional training courses. Take project management, for example, where a robust organizational capability can pare as much as 20 percent of costs in about half the defense budget. One defense organization used "learning by doing" programs to train several waves of project managers and leaders. Managers who successfully completed the training designed to build their project-management capabilities were able to cut costs on most projects by between 20 and 35 percent.

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These five guidelines are the distilled wisdom of hundreds of military and civilian leaders with whom we've been privileged to work. We do not say that this is the sum of all the knowledge on the topic. But we do believe that a transformation that follows these five guidelines stands a higher chance of success.

[1] General H. J. Helsø, "Transformation is key to armed forces' relevance," Danish Defence, July 2013, forsvaret.dk.
[2] UK Office of Government Commerce Gateway Review 888.
[3] B. H. Liddell Hart, *Thoughts on War*, first edition, London, United Kingdom: Faber and Faber, 1944.

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